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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR		ATTORNEY DOCKET NO.
09/383,812	08/26/99	ZELMANOVICH	H	INTECH204-IJ

EXAMINER	
CORSARO, N	
ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/383,812	Helena Zelmanovich
Examiner	**Group Art Unit**
Nick Corsaro	2684

☒ Responsive to communication(s) filed on *Sep 27, 2000*

☒ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) *17-42* is/are pending in the applicat

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *17-42* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Response to Amendment

Response to Arguments

1. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

Examiner Comment

Some statements and phrases within the independent claims are allowing the claims to be interpreted broadly by the examiner.

The following comments are intended to aid the applicant in understanding how the examiner read the claims, and to aid the applicant in clarifying broad language within the claims. Modifications made to the claims based on these comments will not necessarily make the claims allowable.

A. The phrase "calculating the coordinates of the location of each mobile unit as a function of the phase difference", is not well defined. The applicants inventive matter seems to be the function used to make the calculation. If the applicants inventive matter is intended to be the way in which the base station makes the calculation of the coordinates, then the actual method or function should be included in the independent claims to clarify the applicants intent. That is, the statement "calculating as a function of" leaves the claim open to broad interpretation

in that if the phase measurements in prior art are used in any fashion, at any place in the system, to calculate the coordinates, then the coordinates are calculated as a function of the phase measurements. For example, claims 17 and 28 have the limitations of making phase measurements at one pair of antenna elements or at three or more antenna elements, respectively. The claims do not however have a limitation on how the measurements made at each antenna element are used to make the calculation. If the applicants intent is the way in which phase measurements are used to calculate the coordinates, then the independent claims should be clarified as to how the measurements and relation of the antenna elements are used to make the calculation.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 17-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maloney (Ref 1) et al. (4,728,959) in view of Maloney et al. (Ref 2) et al. (6,047,192) .

Consider claims 17, Maloney (Ref 1) discloses a method for tracking the location of mobile units (see col. 1 lines 5-11). Maloney (Ref 1) discloses providing a plurality of mobile units each having a wireless transmitter and a unique address (see col. 4 lines 60-64, and col. 10

lines 15-25). Maloney (Ref 1) discloses providing a plurality of stationary base units, each having a phase array antenna (see col. 3 lines 23-25, col. 3 lines 9-13, col. 3 lines 29-37, col. 4 lines 47-56, col. 7 lines 43-48, col. 6 lines 65-67, and col. 7 lines 1-5). Maloney (Ref 1) discloses receiving a signal including an address from at least one mobile unit at the at least one base unit of said plurality of stationary base units via the phase array antenna (see col. 3 lines 9-13, col. 4 lines 35-40, col. 10 lines 15-25, col. 4 lines 60-65, and col. 5 lines 1-11). Maloney (Ref 1) measuring the phase difference of the signal arriving at one pair of antenna elements of the phase array antenna at more than one stationary base unit of said plurality of stationary base units from each mobile unit (see col. 4 lines 30-40, col. 6 lines 65-67, col. 7 lines 1-32, col. 7 lines 43-48, col. 4 lines 47-64, and col. 10 lines 15-25). Maloney (Ref 1) discloses calculating the coordinates of the location of each mobile unit as a function of the phase difference (see col.5 lines 30-36). Maloney (Ref 1) discloses making phase measurements using an array having only two elements and thus an array with two elements could be used, however the stationary stations taught by Maloney (Ref 1) use an array with six elements (see col. 7 lines 43-53). Maloney (Ref 1) does not specifically disclose an array with only two antenna elements. Maloney (Ref 2) teaches an antenna array with only two antenna elements (see col. 8 lines 45-50). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Maloney (Ref 1), and use an array antenna with only two antenna elements, as taught by Maloney (Ref 2), thus lowering the cost of the array by using an antenna with only two elements and optimizing the cost verses the necessary accuracy of the antenna.

Consider claim 18, Maloney (Ref 1) discloses at least one stationary base unit of said plurality of stationary base units periodically polls at least one mobile unit to perform a continuous tracking of said at least one mobile unit by transmission of said signal from said at least one mobile unit to said plurality of stationary base units, and wherein the wireless transmitter of said at least one mobile unit is a transceiver (see col. 1 lines 10-20).

Consider claim 19, Maloney (Ref 1) discloses wherein the step of measuring the phase difference is performed in the said plurality of stationary base units (see col. 3 lines 9-14, and col. 13 lines 1-2). .

Consider claim 20, Maloney (Ref 1) discloses the step of calculating the coordinates is performed in a main unit connected to at least one stationary base unit of said plurality of stationary base units (see col. 4 lines 35-40, and col. 6 lines 47-55).

Consider claim 21, Maloney (Ref 1) discloses each mobile unit has at least one sensor and the signal includes an information signal from the at least one sensor and wherein the information signal is processed by the main unit (see col. 10 lines 10-24).

Consider claim 22, Maloney (Ref 1) is silent on the step of calculating the coordinates comprises calculating the polar coordinates of each mobile unit, however polar coordinates or rectangular coordinates could be used depending on the shape of the area to be monitored and wether or not elevation is to be measured, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Maloney, and use polar coordinates, thus allowing ease of measurement if a circular area is being monitored.

Consider claim 23, Maloney (Ref 1) discloses at least two stationary base units are disposed at a predetermined distance from each other, and wherein the step of calculating the coordinates of each mobile unit comprises measuring the azimuth of the signal from a mobile unit received at each stationary base unit and calculating the coordinates of the location of the mobile unit as a function of the azimuths (see col. 14 lines 14-31).

Consider claim 24, Maloney (Ref 1) discloses providing at least one reference wireless transmitter disposed at a fixed location and having a unique identifying address and calibrating the accuracy of the calculation of the coordinates of the mobile units using the at least one reference transmitter (see col. 7 lines 65-67 and col. 8 lines 1-2).

4. Claims 25-42, are rejected under 35 U.S.C. 103(a) as being unpatentable over Maloney et al. (4,728,959) in view of Hilsenrath et al. (6,026,304).

Consider claim 28, Maloney discloses method for tracking the location of mobile units, comprising the steps of: providing a plurality of mobile units each having a wireless transmitter and a unique address (see col 1 lines 5-11, col. 4 lines 60-64, and col. 10 lines 1-25). Maloney discloses providing a stationary base unit having a phase array antenna with three or more antenna elements ; receiving a signal including an address from at least one mobile unit at the stationary base unit via the phase array antenna (see col. 3 lines 9-13, col. 7 lines 40-55, col. 4 lines 35-40, col. 10 lines 15-25, col. 4 lines 60-65, and col. 5 lines 1-11). Maloney discloses measuring the phase difference of the signal arriving at two antenna elements of the phase array

antenna at the stationary base unit from each mobile unit; and calculating the coordinates of the location of each mobile unit as a function of the phase difference (see col. 6 lines 65-67, col. 7 lines 1-15). Maloney does not specifically disclose a single stationary base unit having a phase array antenna with three or more antenna elements measuring the phase difference of the signal arriving at said three or more antenna elements of the phase array antenna at the stationary base unit from each mobile unit; and calculating the coordinates of the location of each mobile unit as a function of the phase difference. Hilsenrath teaches a single stationary base unit having a phase array antenna with three or more antenna elements measuring the phase difference of the signal arriving at said three or more antenna elements of the phase array antenna at the stationary base unit from each mobile unit; and calculating the coordinates of the location of each mobile unit as a function of the phase difference (see col. 4 lines 35-50, col. 6 lines 15-23). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Maloney, and use a single stationary base unit having a phase array antenna with three or more antenna elements measuring the phase difference of the signal arriving at said three or more antenna elements of the phase array antenna at the stationary base unit from each mobile unit; and calculating the coordinates of the location of each mobile unit as a function of the phase difference, as taught by Hilsenrath, thus allowing location determination with one station.

Consider claim 38, Maloney discloses a method for calibrating a system for tracking the location of mobile units (see col. 1 lines 5-10, and col. 7 lines 65-68). Maloney discloses providing at least one stationary base unit having a phase array antenna having antenna elements

for receiving signals from a plurality of mobile wireless transmitter units (see col. 4 lines 47-56 and col. 7 lines 1-32). Maloney teaches at least one reference wireless transmitter disposed at a fixed location and having a unique identifying address; receiving a signal including an address from the at least one reference transceiver at the at least one base unit via the phase array antenna; measuring the phase difference between the signal arriving at each antenna element from the at least one reference transmitter; calculating the coordinates of the location of the at least one reference transmitter (see col. 7 lines 63-68, col. 8 lines 1-2, col. 7 lines 10-24, and col. 5 lines 30-36). Maloney does not teach correcting future calculations by the difference between the calculated coordinates of the at least one reference transmitter and the actual location of the at lest one reverence transmitter. Hilsenrath teaches correcting future calculations by the difference between the calculated coordinates of the at least one reference transmitter and the actual location of the at least one reverence transmitter (see col. 4 lines 24-27, col. 4 lines 43-48, col. 4 lines 48-50, col. 6 lines 6-16, col. 7 lines 8-22, col. 9 lines 53-67, col. 10 lines 1-10, and col. 10 lines 11-13). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Maloney, and correct future calculations by the difference between the calculated coordinates of the at least one reference transmitter and the actual location of the at least one reference transmitter, as taught by Hilsenrath, thus acquiring more accurate location information.

Consider claims 29 and 39, Maloney discloses at least one stationary base unit of said plurality of stationary base units periodically polls at least one mobile unit to perform a continuous tracking of said at least one mobile unit by transmission of said signal from said at least one mobile unit to said plurality of stationary base units, and wherein the wireless transmitter of said at least one mobile unit is a transceiver (see col. 1 lines 10-20).

Consider claims 30 and 40, Maloney discloses wherein the step of measuring the phase difference is performed in the said plurality of stationary base units (see col. 3 lines 9-14, and col. 13 lines 1-2). .

Consider claims 31 and 41, Maloney discloses the step of calculating the coordinates is performed in a main unit connected to at least one stationary base unit of said plurality of stationary base units (see col. 4 lines 35-40, and col. 6 lines 47-55).

Consider claim 32, Maloney discloses each mobile unit has at least one sensor and the signal includes an information signal from the at least one sensor and wherein the information signal is processed by the main unit (see col. 10 lines 10-24).

Consider claims 33 and 42, Maloney is silent on the step of calculating the coordinates comprises calculating the polar coordinates of each mobile unit, however polar coordinates or rectangular coordinates could be used depending on the shape of the area to be monitored and wether or not elevation is to be measured, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Maloney, and use polar coordinates, thus allowing ease of measurement if a circular area is being monitored.

Consider claim 34, Maloney discloses providing at least one reference wireless transmitter disposed at a fixed location and having a unique identifying address and calibrating the accuracy of the calculation of the coordinates of the mobile units using the at least one reference transmitter (see col. 7 lines 65-67 and col. 8 lines 1-2).

Consider claims 25, 26, 27, 35, 36, and 37, Maloney teaches the step of calibrating comprises measuring the phase difference between the signal arriving at each antenna element from the at least one reference transmitter, calculating the coordinates of the location of the at least one reference transmitter (see col. 7 lines 63-67, and col. 8 lines 1-2). Maloney does specifically disclose correcting future calculations by the difference between the calculated coordinates of the at least one reference transmitter and the actual location of the at least one reference transmitter. Hilsenrath teaches correcting future calculations by the difference between the calculated coordinates of the at least one reference transmitter and the actual location of the at least one reference transmitter (see col. 4 lines 24-27, col. 4 lines 43-48, col. 4 lines 48-50, col. 6 lines 6-16, col. 7 lines 8-22, col. 9 lines 53-67, col. 10 lines 1-10, and col. 10 lines 11-13). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Maloney, and correct future calculations by the difference between the calculated coordinates of the at least one reference transmitter and the actual location of the at least one reference transmitter, as taught by Hilsenrath, thus acquiring more accurate location information.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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